

Appln No. 10/626,240

Am dt date August 13, 2005

Reply to Office action of February 14, 2005

REMARKS/ARGUMENTS

In the Office action dated February 14, 2005, objections were made to the drawings and the specification and claims 10 - 12 and 15 - 24 were rejected under 35 U.S.C. § 102 or 35 U.S.C. § 103. Claims 13 and 14 were allowed.

By this Amendment, Applicant has amended claims 10, 11, 15, 16, 17, 19, 20, 22 and 23 and canceled claims 12, 18, 21 and 24. Reconsideration and reexamination are hereby requested for claims 10 - 11, 13 - 17, 19 - 20 and 22 - 23 that are now pending in this application.

Request for Acknowledgment of Information Disclosure Statement

Applicant submitted an Information Disclosure Statement including cited references to the U.S. Patent Office on February 11, 2003. Applicant suspects that this Information Disclosure Statement had not reached the Examiner at the time the February 14, 2005 Office action issued. Accordingly, Applicant requests that this Information Disclosure Statement be considered and an initialed copy of the FORM PTO/SB/08A/B be entered in the application file and returned to Applicant with the next communication from the Office in accordance with MPEP § 609.

Response to the Objection to the Drawings

The Examiner requested that Figure 1 be designated as prior art. Applicant has amended Figure 1 as requested.

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Response to the Objection to the Specification

The Examiner objected to the specification because of an informality in paragraph 0022. Applicant has amended the specification as suggested by the Examiner.

Response to the 35 U.S.C. § 102 Rejection (Gillis)

The Examiner rejected claims 10, 16, 19 and 22 under 35 U.S.C. § 102(e) as being unpatentable over Gillis et al., U.S. Patent No. 6,631,096 (hereafter referred to as "Gillis").

Gillis teaches how to differentiate a non-intrusion event from an intrusion event based on the shape of a signal envelope. Specifically, Gillis uses the time duration between a rise and a decay of an envelope signal as means to differentiate a non-intrusion event from an intrusion event. See, for example, the last line of column 5 to line 15 of column 6 and Figs. 4 and 5 of Gillis. Also see column 8, line 65 - column 9, line 8 where Gillis discusses determining a non-intrusion event based on the number of samples below a decay threshold.

The rejection of the claims is based on the contention that in Fig. 4 of Gillis, the peaks are a "second level" and the valleys are "a first level" as claimed. However, in amended claims 10, 16, 19 and 22 the first level is set to be at or higher than a threshold value based on which the presence of an intrusion can be recognized. This aspect of claims 10, 16, 19 and 22 is not taught or suggested by Gillis. For example, Gillis does not teach or suggest defining a corresponding set threshold of Figure 7A in the claimed manner.

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An apparatus or vehicle constructed or a method practiced according to claims 10, 16, 19 or 22 may thus be configured to use only a rise time of a signal to differentiate a non-intrusion event from an intrusion event. Such an apparatus or method may be configured to detect a rise time of a signal by setting a first level to be at or slightly higher than a threshold value based on which the presence of an intrusion can be recognized, and setting a second level to be sufficiently higher than the first level.

In view of the above, Applicant submits that claims 10, 16, 19 and 22 are patentable over Gillis.

Response to the 35 U.S.C. § 102 Rejection (Kani)

The Examiner rejected claims 11, 12, 17, 18, 20, 21, 23 and 24 under 35 U.S.C. § 102(e) as being unpatentable over Kani et al., U.S. Patent No. 5,856,778 (hereafter referred to as "Kani"). Claims 12, 18, 21 and 24 have been canceled.

The rejection is based on the assertion that step 140 shown in Fig. 5 of Kani corresponds to a feature of original claims 11, 17, 20 and 23: "if a level of the signal that is higher than a predetermined level . . . has not lasted continuously for a predetermined length of time." However, in step 140 shown in Fig. 5, Kani judges as to whether or not the state in which the period T is within the predetermined ΔT_0 , continues for a predetermined time N. In this case, Kani states that the predetermined ΔT_0 corresponds to a relative intruding speed of a person into the passenger compartment of the vehicle with respect to the ultrasonic transmitting/receiving sensor S.

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In contrast, an apparatus or vehicle constructed or a method practiced according to claims 11, 17, 20 or 23 may be configured to detect whether or not a strength level of the signal that is higher than a predetermined level has not lasted continuously for a predetermined length of time. Thus, there is a difference between these claims and Kani et al. regarding what is being detected. Claims 11, 17, 20 and 23 relate to detecting a strength level of a signal, i.e., amplitude of the signal while Kani detects frequency of a signal.

Moreover, in the amended claims the predetermined level is set to be at or higher than a threshold value based on which the presence of an intrusion can be recognized. This aspect of the claims is not taught or suggested by Kani. For example, Kani does not teach or suggest defining a corresponding reference level in Figure 5. Note also the discussion of the separate ultrasonic receiver to detect air turbulence at step 150 relates to an entirely different signal. See column 5, lines 43 - 61.

In view of the above, Applicant submits that claims 11, 17, 20 and 23 are patentable over Kani.

Response to the 35 U.S.C. § 103 Rejections of Claim 15

The Examiner rejected claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Kani. Kani does not teach or suggest "detecting that a maximum level in one cycle of the signal that is higher than a predetermined level, which level is set to be at or higher than a threshold value based on which the presence of an intrusion can be recognized, has not lasted continuously for a predetermined length of time" as set forth in amended

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claim 15. Accordingly, Applicant submits that claim 15 is patentable over Kani.

CONCLUSION

For the foregoing reasons Applicant submits that the claims are patentable over the references of record since these references considered either alone or in combination do not teach or suggest all of the limitations of the pending claims. Reexamination and reconsideration are respectfully requested.

Respectfully submitted,
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Amendments to the Drawings:

The attached sheet of drawings includes changes to Figure 1. This sheet, which includes Figure 1, replaces the original sheet including Figure 1.

Attachment: Replacement Sheet

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APPENDIX